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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,479	02/27/2002	Yoshitaka Yamada	P 290743 T4FY-01S1659	4783

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PILLSBURY WINTHROP, LLP
P.O. BOX 10500
MCLEAN, VA 22102

EXAMINER

WANG, GEORGE Y

ART UNIT PAPER NUMBER

2871

DATE MAILED: 07/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/083,479

Applicant(s)

YAMADA ET AL.

Examiner

George Y. Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) 2 and 14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it is too long. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. Correction is required. See MPEP § 608.01(b).

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

For example, the following title is suggested: "Liquid Crystal Display Device with Light-Shielding Memory Wirings for Storing Display Data."

Claim Objections

3. Claim 2 is objected to because it is uncertain as to which electrode is referred to as being transparent since there is a first and second electrode that form the antecedent basis. Appropriate correction is required.

4. Claim 14 is objected to because the claim recites that the "first electrode further includes another color filter." Examiner notes, however, that there is insufficient antecedent basis for this limitation in the claim since there was never a mention of a first or initial color filter in any of the preceding claims.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spitzer et al. (U.S. Patent No. 5,654,811, from hereinafter "Spitzer") in view of Murade et al. (U.S. Patent No. 6,433,767).

8. As to claim 1, Spitzer discloses a liquid crystal display panel with a light-emitting first and second electrode substrates and a liquid crystal layer between the electrodes

(col. 5, lines 33-1). The reference also teaches that the first electrode substrate includes an electrode that applies an electric field (col. 13, lines 24-31) to the liquid crystal layer, a thin film transistor (TFT) (col. 2, lines 9-13), a light-shield (fig. 39d, ref. 1234), and a reflection member (col. 6, lines 51-62) which reflects incident light applied from a second electrode substrate side through the liquid crystal layer.

However, Spitzer fails to specifically disclose a light-shielding wiring pattern having a plurality of memory wiring layers connected to electrode and the TFT, and apertures to allow for transmission of light from a rear side of the electrode substrate.

Murade discloses a liquid crystal apparatus having a light-shielding wiring pattern having a plurality of memory wiring layers connected to electrode and the TFT, and apertures to allow for transmission of light from a rear side of the electrode substrate (abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a light-shielding wiring pattern having a plurality of memory wiring layers connected to electrode and the TFT, and apertures to allow for transmission of light from a rear side of the electrode substrate since one would be motivated to produce high-quality images (abstract) by effectively reducing the resistance of the wirings in the peripheral circuit (col. 3, lines 21-27). This allows the production of high-quality images even if the driving frequency of the device is increased or if the number of serial-parallel conversion phases or the number of image signals, which are input in parallel, are increased as well (col. 11, lines 2-9).

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9. As per claim 2, Spitzer discloses the LCD panel as recited above with an electrode that is transparent (fig. 33a, ref. 419) and located closer to the liquid crystal layer than the light-shielding wiring pattern.

10. Regarding claims 3-4, Spitzer discloses the LCD panel as recited above with a reflection member that includes at least one memory wiring layer, a reflective material layer formed on memory wiring layer, and a reflective material layer formed on the transparent electrode (col. 8, lines 45-56), covering a total area greater than 60%.

11. As to claims 5-10, Spitzer discloses the LCD panel as recited above with a reflective material made of high reflective material, such as aluminum as a major component (col. 14, lines 23-36), which has a reflection characteristic in which more than 80% of incident light is reflected, and high melting point, such as tungsten or molybdenum (col. 44, lines 26-33).

12. Regarding claims 13-14, Spitzer discloses the LCD panel as recited above with the first or second electrode having a color filter (fig. 1, ref. 16).

13. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spitzer and Murade, and in further view of Umemoto et al. (U.S. Publication No. 2001/0007489, from hereinafter "Umemoto").

Spitzer and Murade disclose the LCD device as recited above, however, the references fail to specifically disclose a second electrode substrate with a light diffusion layer and a reflection member with undulations.

Umemoto discloses a reflection-transmission LCD device with a second electrode substrate having a light diffusion layer (fig. 1, ref. 12) and a reflection member (fig. 1, ref. 11) with undulations (fig. 1, ref. A, A1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a second electrode substrate with a light diffusion layer and a reflection member with undulations since one would be motivated to reduce thickness and weight (pg. 1, [0007]) while maintaining excellent display quality (pg. 1, [0009], and all the while maintaining a state of light that is well balanced so that transmission and reflection modes are both favored (pg. 2, [0012]).

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Y. Wang whose telephone number is 703-305-7242. The examiner can normally be reached on M-F, 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 703-305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

gw
June 24, 2003


ROBERT H. KIM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 21